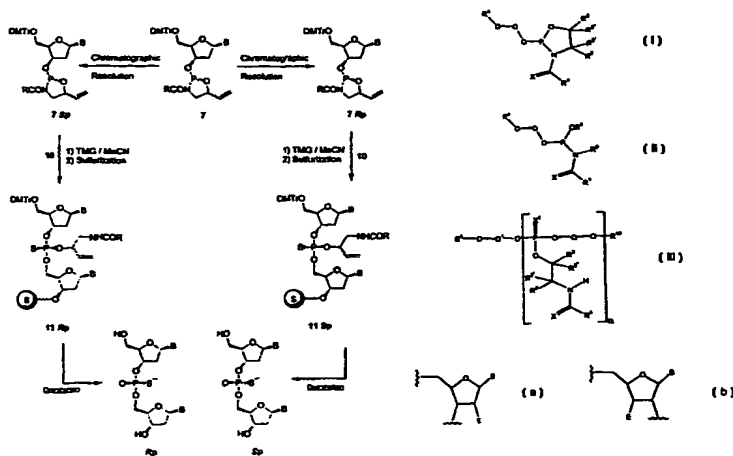




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(54) Title: N-ACYLPHOSPHORAMIDITES AND THEIR USE IN OLIGONUCLEOTIDE SYNTHESIS



## (57) Abstract

The present invention provides a compound of formula (I), (II), or (III), wherein  $R^1$ ,  $R^2$ ,  $R^2'$ ,  $R^3$ , and  $R^3'$  are the same or different and each is H, an alkyl, an alkenyl, an alkynyl, a cycloalkyl, an aryl, or an aralkyl. Alternatively, either of  $R^2$  or  $R^2'$  combined with either of  $R^3$  or  $R^3'$  comprises a ring.  $R^4$  is a protecting group or a solid support.  $R^5$  is H or an alkyl.  $R^6$  is a protecting group, an amidoalkyl, an alkyl, an alkyl ketone, an alkenyl, an alkynyl, a cycloalkyl, an aryl, or an aralkyl.  $R^{15}$  is H or a protecting group. Q and Q' are the same or different and each is a nucleoside, an oligonucleotide comprising a nucleoside, or an oligomer comprising a nucleoside, which is of formula (a) or (b), wherein B is a labeling group, an alkyl, an alkenyl, an alkynyl, a cyclic group optionally containing one or more heteroatoms, or an amino; and, E is H, a halogen, a hydroxy, an alkoxy, an ester, an amino or a protecting group. X and X' are independently O, S, or Se, and n is an integer from 1 to about 300. Each Q in each monomeric unit defined by n can be the same or different. The present invention further provides a method of preparing a polymer using the N-acylphosphoramidite of formula (I) or (II).

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